

REMARKS

This Amendment is in response to the Official Action mailed December 20, 2002. A Petition for a three-month extension of time, extending the time to respond from March 20, 2003 to and including June 20, 2003 is enclosed herewith and incorporated herein by reference.

As an initial matter, the Examiner has indicated that the substitute specification filed with the Preliminary Amendment has not been entered because it was unaccompanied by a statement that it does not contain new matter. The Examiner's attention is respectfully directed to the second paragraph of the "REMARKS" on page 2 of the Preliminary Amendment, where it is stated the revisions to the specification contain no new matter. Accordingly, Applicants respectfully request entry of the substitute specification.

Claims 7-12 and 14-20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Henricson '363* or *Henricson '545* in view of *Bentvelzen et al* and the "admitted prior art" or AT 403 704 or *SIXTA et al*. The Examiner has alleged that the two primary references teach bleaching medium consistency pulp with ozone and a carrier gas by mixing the ozone and carrier gas into the pulp with a high shear mixer. The Examiner has concluded that it would have been obvious to substitute the high shear mixer of *Bentvelzen* for the high shear mixer of the *Henricson* patents, and that it would also have been obvious to use high concentrations of ozone when bleaching as taught by the tertiary references. Applicants respectfully traverse this rejection because the collective teachings of the prior art would not have

motivated one skilled in the art to produce the claimed invention with a reasonable expectation of success.

The methods taught in the *Henricson* patents explicitly point out that the mixers should be of the "high shear" type. See, e.g., *Henricson* '545 on col. 1, lines 52-54 and col. 2, lines 65-66. *Henricson* '363 (col. 3, lines 7-10) teaches that the fluidizing mixers are preferably of the type disclosed in CA 1,313,325 (which on p. 8 lines 30-34; p. 9 lines 1-3, discloses a throttling agent to be used as a mixer), and WO 93/07961 (which on p. 10, lines 1-4, discloses a mixer with an "extensive shear force field"). There is no disclosure of bleaching without using a high shear mixer.

The *Bentvelzen* patent is directed primarily to the use of oxygen and high shear mixers to treat medium consistency pulp. The text on page 2 of the Office action states that *Bentvelzen* teaches high shear mixers. Applicant agrees that the mixers described on column 35, lines 3-15 of *Bentvelzen* are of the *high* shear type. Thus, substitution of this mixer for the mixers disclosed in the *Henricson* patents would not have resulted in a process of bleaching medium-consistency pulp using ozone but without using a high shear mixer.

In fact, the *Sixta* patent expressly teaches that medium consistency pulp can be treated with ozone containing gas *if* the gas is under pressure *and* the process is carried out with simultaneous vigorous agitation e.g., using a *high shear* mixer. The disclosure on column 4, lines 22-49) of *Sixta* reads as follows:

By contrast with this disclosure, the present invention has discovered that middle-consistency range pulp can be directly treated with ozone containing gas provided that the gas is under

pressure and the process is carried out with simultaneous vigorous agitation. A dilution and dewatering of the pulp suspension as is required by Austrian Patent 380 496 (see page 3, lines 19-20 and 35-36) is unnecessary.

For optimum results in accordance with the present invention it is advantageous to maintain the volume ratio of gas:liquid at 1:0.5 to 1:8 and preferably 1:1 to 1:6.

For compression of the ozone containing gas we preferably use a cooled compressor, most advantageously a water ring pump. Preferably the vigorous agitation or mixing is carried out using a high-shear mixer.

High-shear mixers are known and have been used for various purposes. For example we may use the high-shear mixer utilized for the dispersion of pigments or dyestuffs in German Patent Document 24 06 430, the high-shear mixer used in the production of PVC powder in U.S. Pat. No. 3,775,359, the high-shear mixer used for the production of semisolid emulsions in U.S. Pat. No. 3,635,834, or the high-shear mixer used in conjunction with pulp suspensions in Japanese Patent 63099389.

A high-shear mixer has plates with protuberances at a given distance from one another and passes the material between these plates to effect an intimate mixing without milling.

Plainly, the teachings of *Sixta* would have led the skilled artisan away from, as opposed to toward the claimed invention. Even though *Sixta* has been cited and relied upon for its teachings with respect to ozone concentrations, it must be considered in its entirety. It is impermissible within the framework of section 103 to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to

one of ordinary skill in the art. *In re Hedges*, 228 USPQ 685, 687 (1986). See also, *In re Fine*, 5 USPQ2d 1596, 1600 (Fed. Cir. 1988) ("One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.")

Regarding the aspect of ozone concentration, and aside from *Sixta*, *Henricson* '545 teaches using oxygen as a carrier gas because it contains the greatest amount of ozone, specifically, about "3-16%, at the most." (col. 1, lns. 45-48). The Examiner has alleged that AT 403 704 teaches using high ozone concentrations, and more specifically, 120 g/m<sup>3</sup> ozone. Referring to the Search Report that accompanies Applicants' corresponding published PCT application, AT 403,704, which is in a language other than English, corresponds to Canadian Patent Application 2,132,165. The '165 publication teaches a process of using ozone for bleaching pulp at a consistency of more than 25% i.e., high consistency pulp. Regarding the so-called "admitted prior art," and again referring to the Search Report, EP 426,654 corresponds to the *Sixta* patent, and thus has already been addressed. Swedish Patent Application 9502339-6 corresponds to WO 97/01507 (of record). The '507 publication is directed to methods and devices for producing ozone, and is silent with respect to bleaching of pulp.

Further, the recitations of the dependent claims (other than claim 13, as discussed below), as well as recitations of independent claims 14 and 20 (e.g., "residence time of about 10 to about 40 seconds," and "substantially free from chlorine") have not been addressed.

In view of the foregoing, reconsideration and withdrawal of these rejections are respectfully requested.

Claim 13 has been rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of references cited above, in further view of *Cheng*. The Examiner alleges that *Cheng* teaches using a porous metal injector to disperse a gas into a liquid and that it would have been obvious to use the distribution injector or nozzle of *Cheng* to distribute the ozone gas of *Bentvelzen* into the pulp slurry. Claim 13 is dependent upon claim 7 and incorporates all of the elements of claim 7, discussed above. Accordingly, Applicants' arguments set forth above are applicable here as well and are incorporated herein. *Cheng* is silent about bleaching pulp, however. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

Claim 7 stands rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification. The Examiner has alleged that there is no original disclosure indicating that the ozone is formed from pressurized oxygen. The language in question was deleted by way of the September 12, 2002 amendment. Accordingly, reconsideration and withdrawal of the rejection is respectfully requested. Dependent claim 8, however, has been amended to delete the recitation "formed from pressurized oxygen, and replace it with "precompressed oxygen", support for which is contained on page 4, line 23 of the original specification. Applicants have also added a new independent claim that contains this language. Thus, no new matter has been added. Accordingly, entry of the amendment is respectfully requested.

In view of the amendments and remarks, further and favorable consideration of claims 7-20 and the issuance of a

Notice of Allowance with respect to these claims are earnestly solicited.

No fee is deemed necessary in connection with the filing of this Amendment. However, if any fee is required, the Examiner is authorized to charge any such fee to our Deposit Account No. 12-1095.

Dated: June 20, 2003

Respectfully submitted,

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